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Geologic Analysis and Evaluation of ERTS-A
Imagery for the State of New Mexico
MMC-262

Principal Investigator: Dr. Frank E. Kottowski
GSFC ID No. S349
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The main problem hindering the progress of this investigation is the relatively cloudy weather we have had since last summer. Although we increased the maximum acceptable cloud cover for our standing order from 10 percent to 30 percent, we still do not have complete ERTS coverage of the entire state. The mountainous regions in the northern and western parts of the state have been particularly cloudy. We are beginning to be concerned that we may not get sufficient cloud-free coverage to allow us to compile an ERTS photo-mosaic of New Mexico. The inability to get cloud-free imagery of the central-western part of the state has prevented us from studying the extensive volcanic flow units of this area.

The quality of the imagery we have been receiving is satisfactory. The electronic "dodging" technique undertaken by NDPF in March has resulted in an improvement in overall contrast. The overexposed appearance, a characteristic of high reflectance areas such as playas and intermontane basins, has been virtually eliminated and considerable ground surface detail can now be recognized in these areas of low vegetation density.

The investigatory staff has been continuing with the study of images received. Our work has been confined to visual examination of the imagery and probably will continue to be for the duration of the study. Our efforts in the darkroom at producing enlargements from 70 mm negatives have not been too encouraging, despite the information presented in the January 15 ERTS Investigator's Bulletin.

Sufficient material has been received to allow an examination of the stereoscopic potential of ERTS images. Stereoscopic coverage is reasonably sharp for about 15 Km along the north and south margins of consecutive images in a particular orbit. The best stereoscopic effect is along the east and west edges of images from consecutive orbits, where overlap is of the order of 50 Km.

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Dr. Kottlowski noted and is investigating a possible correlation between vegetation patterns and geologic and geomorphic units. The vegetative density is apparently related to the availability of water, which in turn is somewhat related to geologic units.

Some coverage of northern Mexico has been obtained as overlap along our southern boundary. For the most part, the images of northern Mexico are excellent. A comparison of one image frame to the 1968 Geologic Map of Mexico suggests some disagreement may exist in eastern Sonora.

We have published no articles in the last two months nor do we have any changes to recommend concerning the present ERTS system. We have not changed our standing order in this report period, nor have we submitted any Image Descriptor Forms or any retrospective Data Request Forms.

Karl Vonder Linden
Mining Engineer and
Environmental Geologist